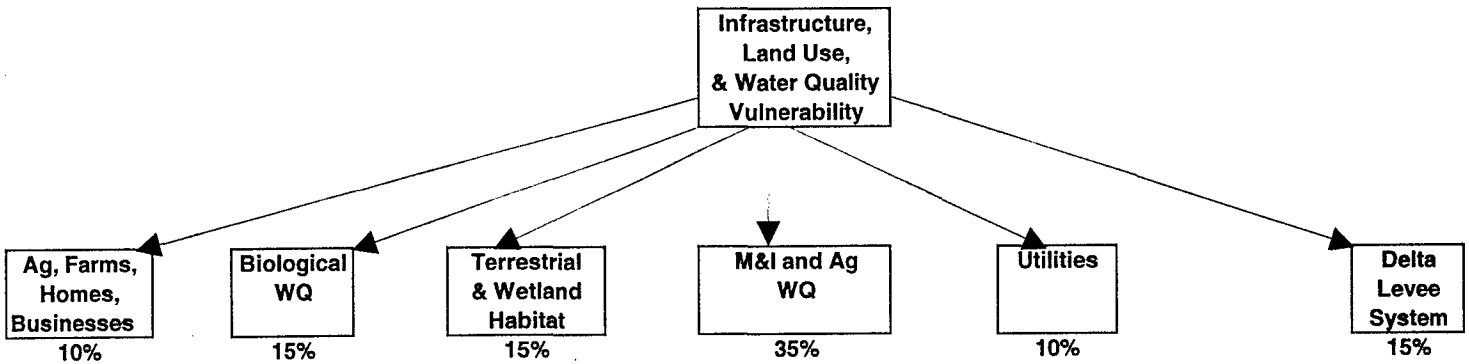
Draft Performance Measure: Infrastructure, Land Use, and Water Quality Vulnerability

Objective: **Reduce the risk to land use and associated economic activities.**



The Delta levee system network as in-place infrastructure to prevent flooding and pre-emption of land uses, contain channel flows, and provide the foundation for certain key roads, buildings, navigational aids, hydraulic control structures, powerlines, etc. Loss of the levee system would necessitate expenditures of major investments of time, money and materials to restore its functionality. Delta-wide catastrophic damage and flooding are the major consequences that could result from widespread levee failures (these could be simultaneous failures or a series of sequential failures radiating from one point, as a result of increased wind fetch, consequent wave size, and resultant damaging erosion)

Land Use, Infrastructure, Habitat and Water Quality Vulnerability
Capability of Actions to provide adequate protection against potential direct damage and flooding of Delta islands and resources caused by catastrophic floods, high tides, high waves, rising sea level, earthquake, tsunami or further land subsidence. A secondary, but equally catastrophic, potential consequence of a general levee failure (or to a lesser degree, even localized failure) during a low outflow period, is a major intrusion of ocean-derived salinity which could contaminate the raw water supply for an extended period. Key components of the performance measure include ability to protect:

· Agricultural lands, farms, homes and businesses, primarily on Delta lowlands that would be subject to inundation and pre-emption of use due to flooding.

· Terrestrial and wetland habitats within the Delta that would be either completely or partially inundated

· Utilities, including railroads, roads, power transmission lines, and aqueducts located on Delta lowlands or elevated foundations. These could be subject to direct damage, pre-emption of use by inundation, or foundational weakening, failure during extended periods of inundation.

· Water quality for municipal, industrial and agricultural beneficial uses, both within the Delta and in the export service areas. Major salinity intrusion caused by a sudden influx of increased salinity water could contaminate the water supply for an extended period and require extraordinary releases of freshwater from storage, accompanied by extensive repairs of infrastructure to restore adequate quality to the water supply.

· Water quality for in-Delta habitats and biological species. The same ocean-derived salts could cause major damage to freshwater and brackish marshes, riparian habitats and other wetlands, and agricultural lands. Prolonged flooding with saltwater could necessitate additional flushing and leaching of soils to remove accumulated salts and restore the capacity of the soil to support the desired beneficial uses.